

Integrated Solutions to Meet Endangered Species, Heritage Use, and Water Quality Needs in the Suisun Marsh

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**Recover
Endangered
Species**

**Protect
Heritage Use and
Existing Habitat
Function**

Integrated Solutions

- **Habitat Levees**
- **Microtidal Managed Wetlands**
- **Flood Control Measures**
- **Amendment III Actions**
- **Tidal Marsh Restoration**

**Protect
Water Quality**

Fundamental Resource Protection Needs in the Suisun Marsh

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“Objectives will not be achieved by denying the objectives of others..”

Fred Nichols 10/9/01

Fundamental Need:

Heritage Use

- Pacific flyway/waterfowl habitat
- Hunting heritage

Need:

Continue the tradition of hunting stewardship subject to reasonable and stable restrictions to protect other fundamental needs.



Fundamental Need:

Endangered Species Recovery

- Suisun Thistle, Soft Birds Beak, Clapper Rail, SMH Mouse, Delta Smelt, Salmon, Splittail...

Need:

Long-term recovery actions with high certainty of supporting self-regulating populations of T&E species



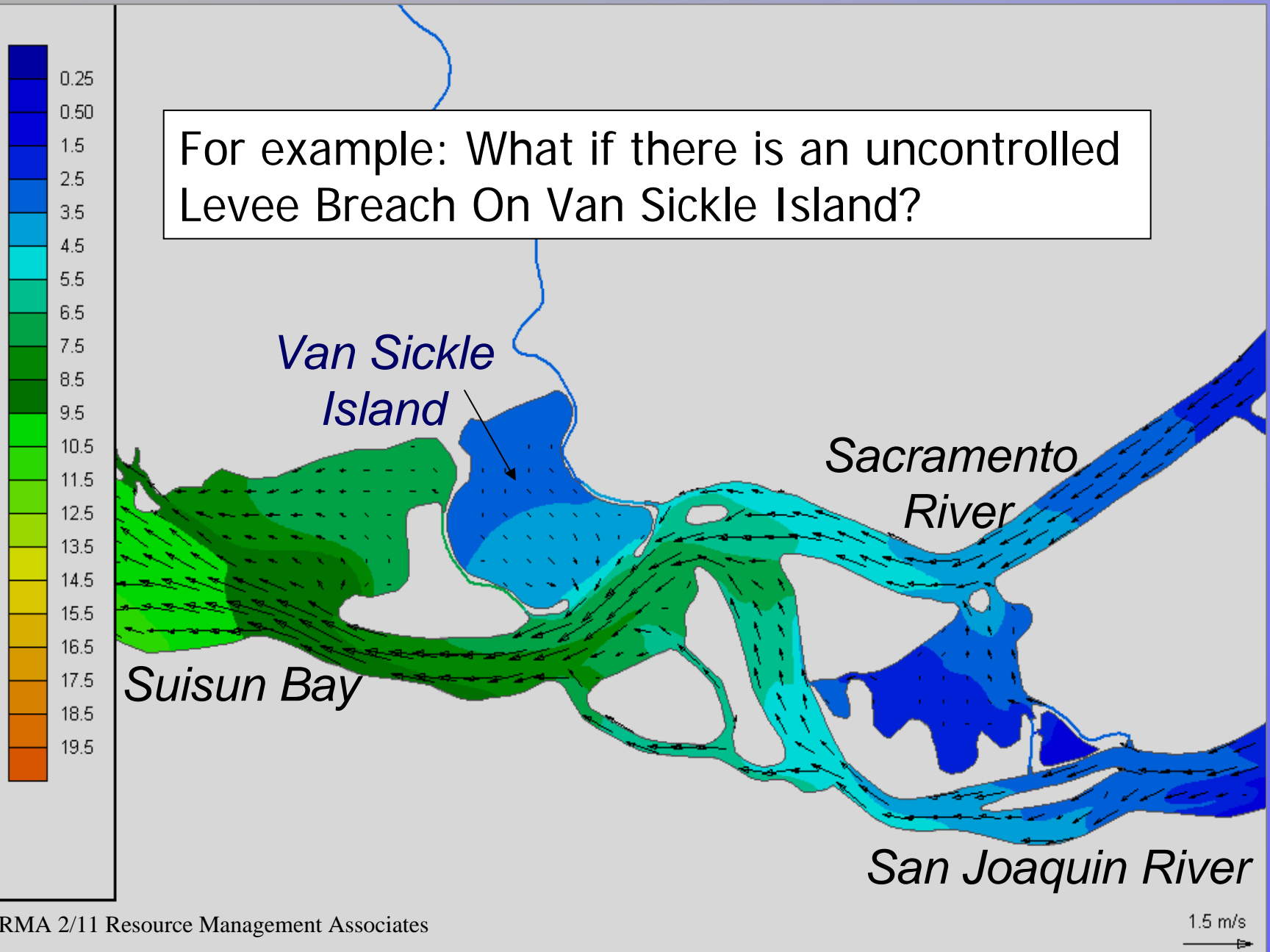
Fundamental Need:

Water Quality Protection

- Suisun Marsh levees are vulnerable and not well maintained
- Uncontrolled levee breaches will increase salinity in Suisun Bay and the Delta.



For example: What if there is an uncontrolled
Levee Breach On Van Sickle Island?





February 1998
Van Sickle Island
looking across to Pittsburg

Water Quality Protection

- Suisun Marsh levees are vulnerable and not well maintained
- Uncontrolled levee breaches will likely increase salinity in Suisun Bay and the Delta.

Need:

Reliable levees to protect Delta water quality



PAST

Heritage Use

- Waterfowl emphasis
- Subsidence
- yikes!

Endangered Species Recovery

- Regulations
- Jeopardy Opinions
- *Ack!*

Water Quality Protection

- Levees
- USBR, DWR
- *Good grief!*

PAST

- Heritage Use:
- Waterfowl emphasis
 - Subsidence
 - yikes!

- Endangered Species Recovery
- Regulations
 - Jeopardy Opinions
 - *Ack!*

- Water Quality Protection
- Levees
 - USBR, DWR
 - *Good Grief!*

PRESENT

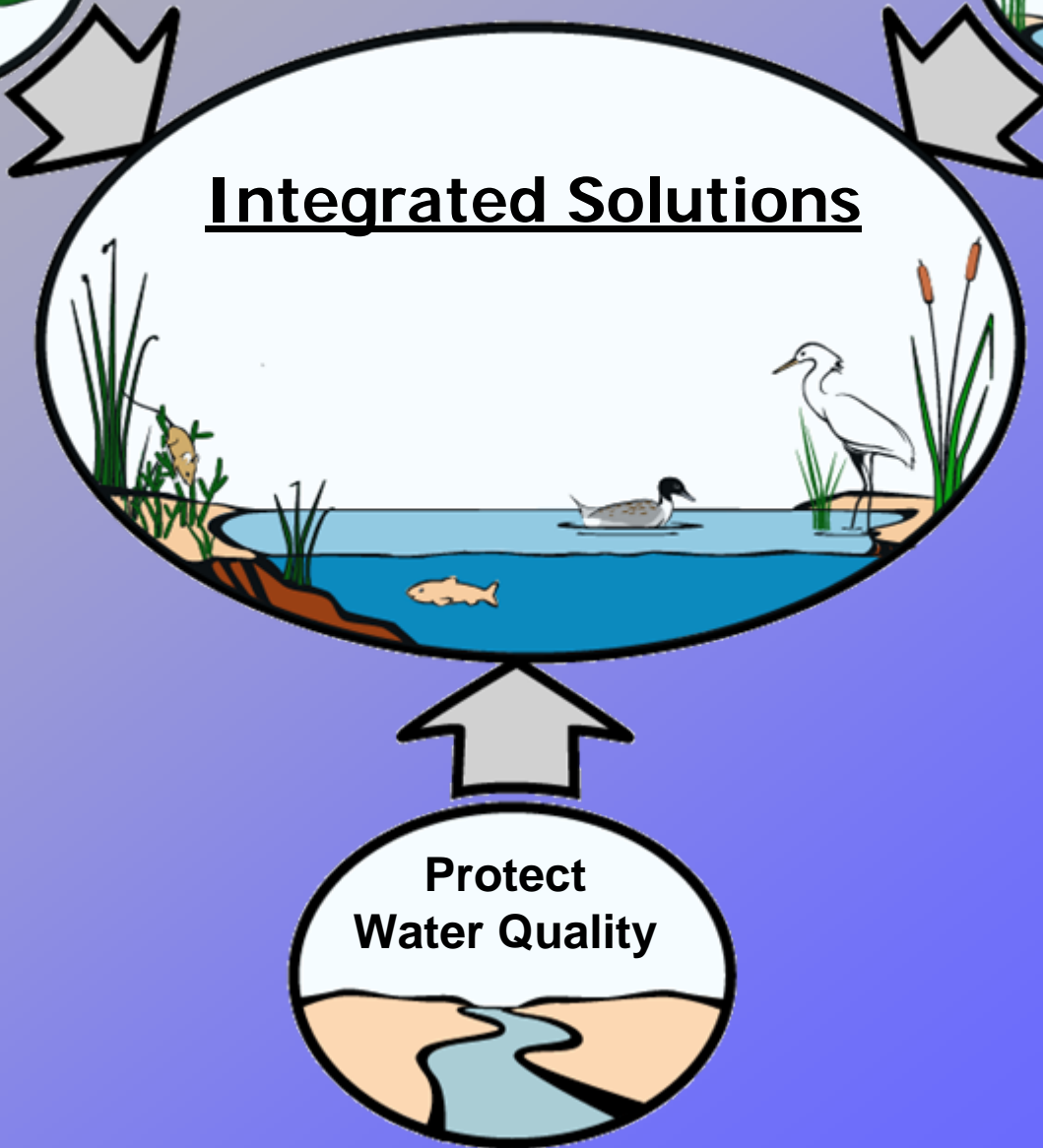
- Charter: Find integrated solutions; Just do it
- Everyone is at the table
- Win-Win-Win thinking
- Tidal Marsh Recovery Plan
- Habitat Levee Experience

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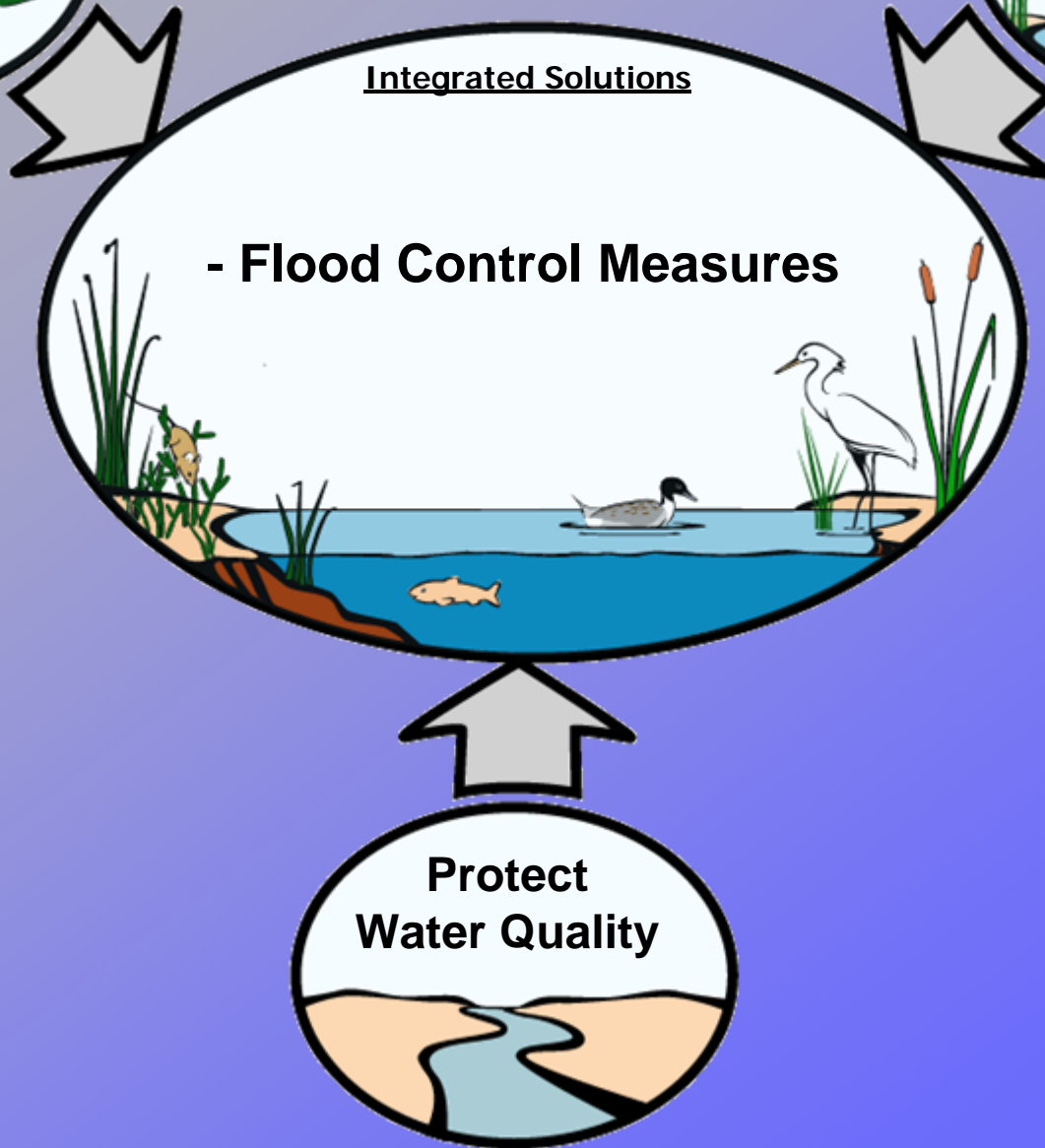
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- Flood Control Measures

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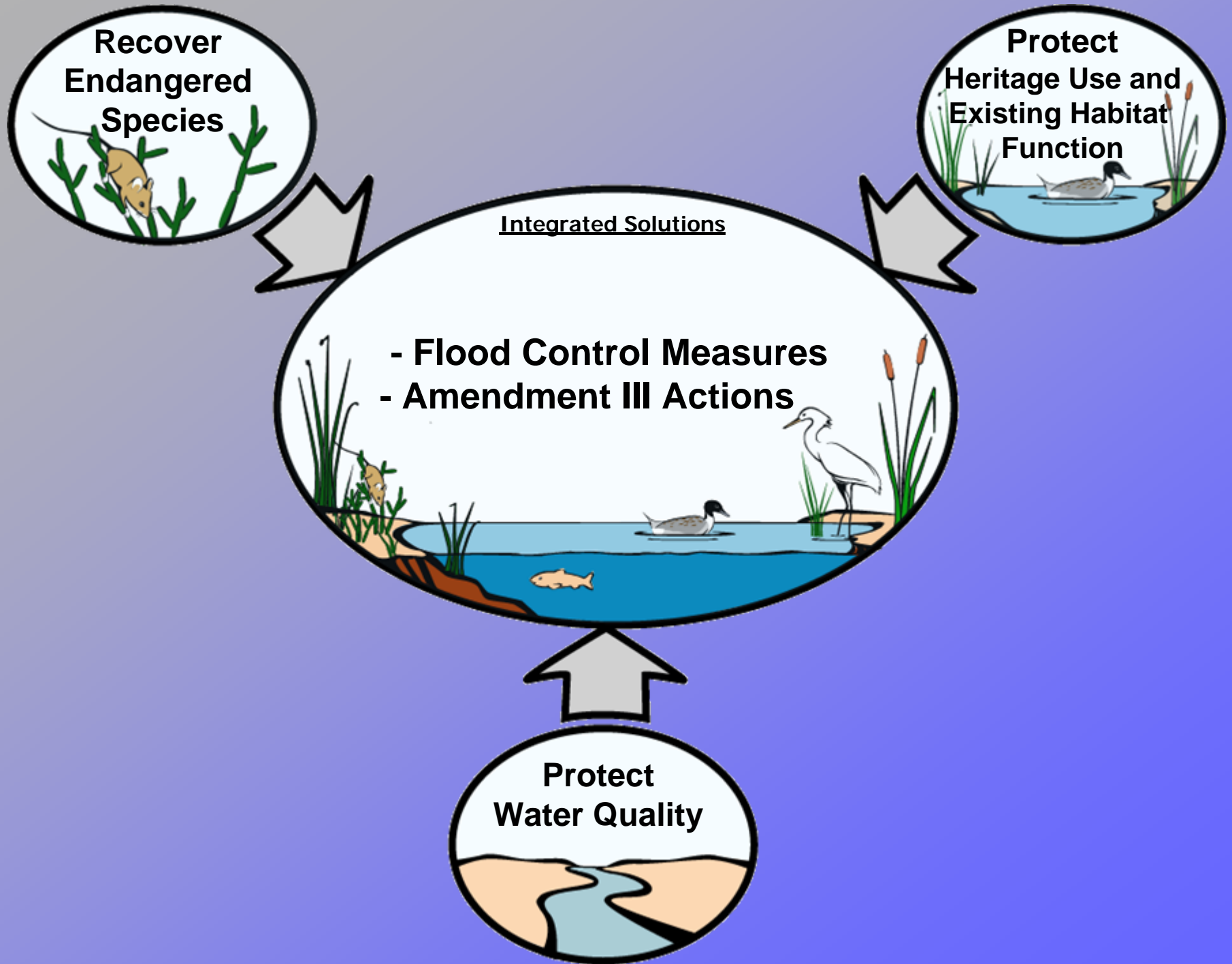
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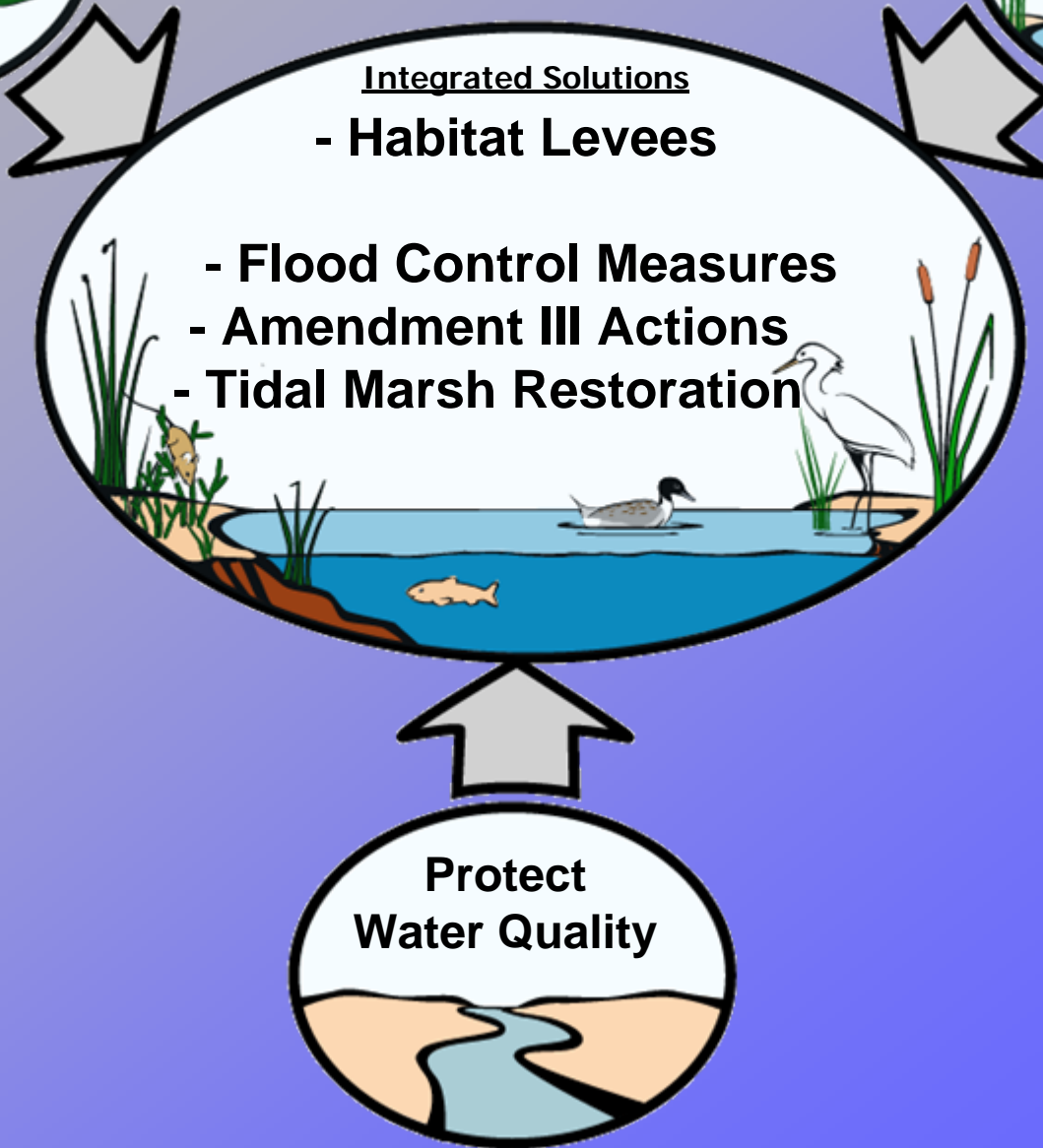
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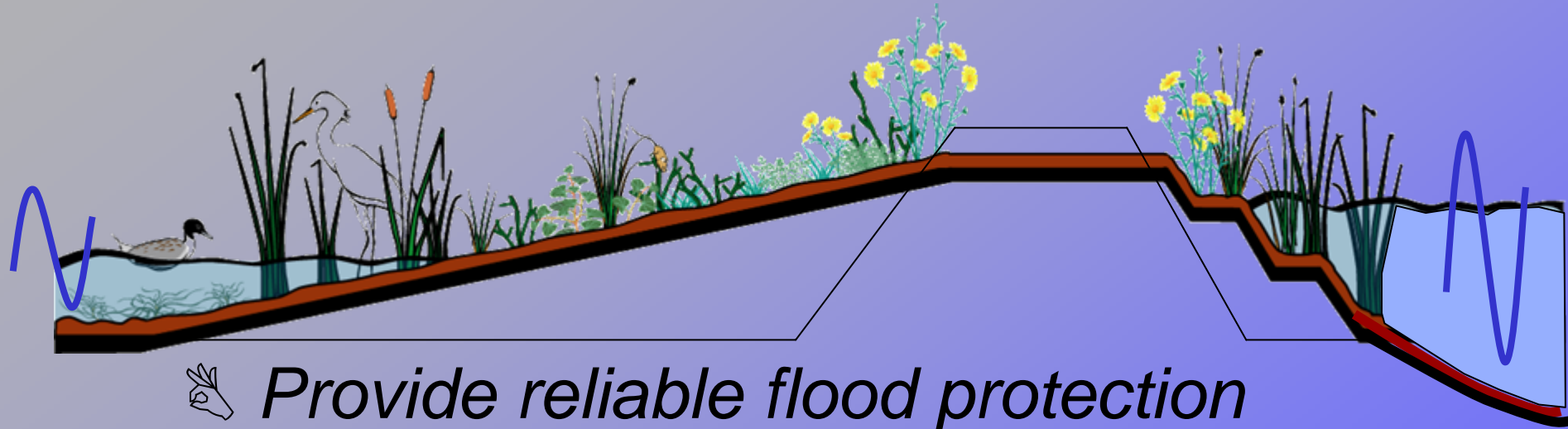
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Key Recognitions:

- Solutions are complementary with more than one need.
- Solutions in combination have synergistic benefits.

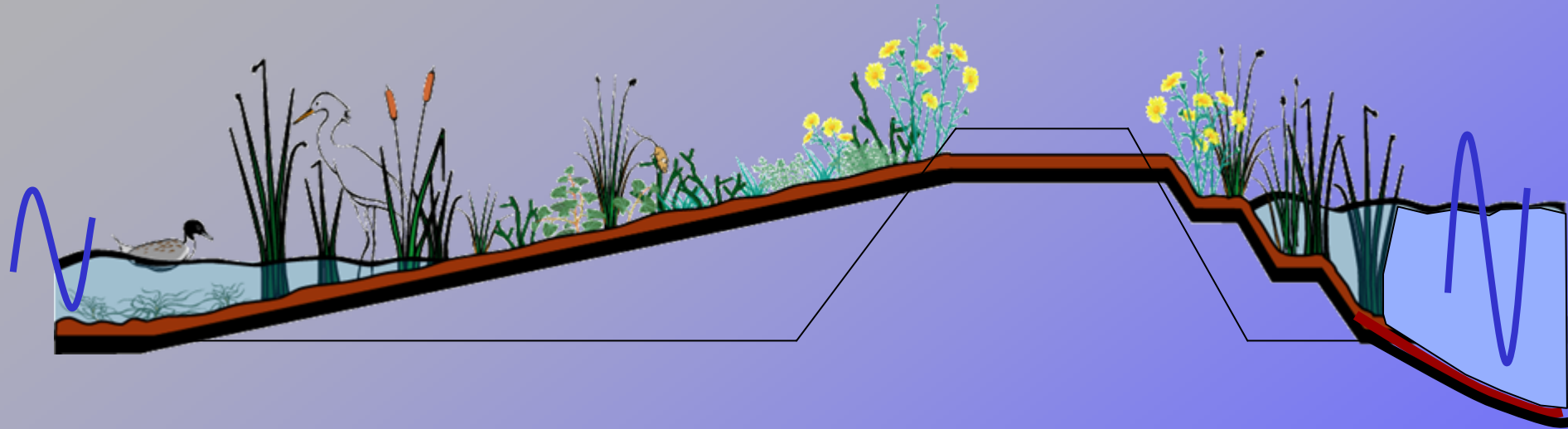
 For example: Habitat levees

Habitat Levees Are Complementary with Water Quality Protection



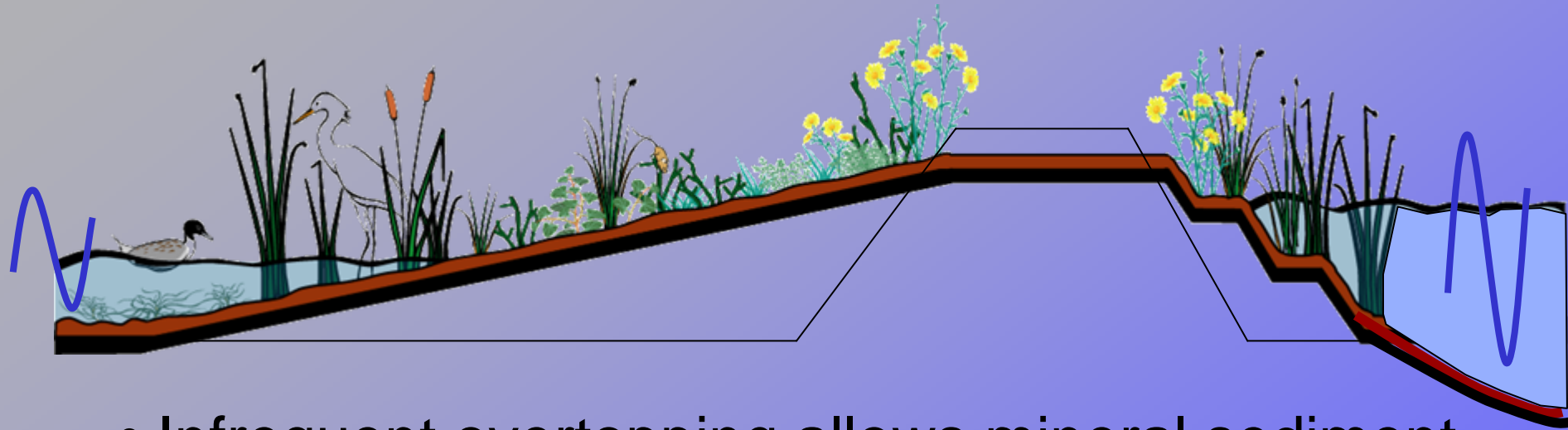
- Wider base, gently sloping (10:1)
- Allow infrequent overtopping
- Resistant to erosion and overtopping damage
- Resistant to soil consolidation settlement
- Dissipate wind wave attack
- More resistant to earthquake failure
- Less maintenance cost

Habitat Levees Are Complementary with Endangered Species Recovery



- Colonized by linear low, mid, and high tidal marsh vegetation
- High quality endangered species habitat
- Infrequent overtopping inhibits terrestrial predator denning

Habitat Levees Are Complementary with Heritage Use

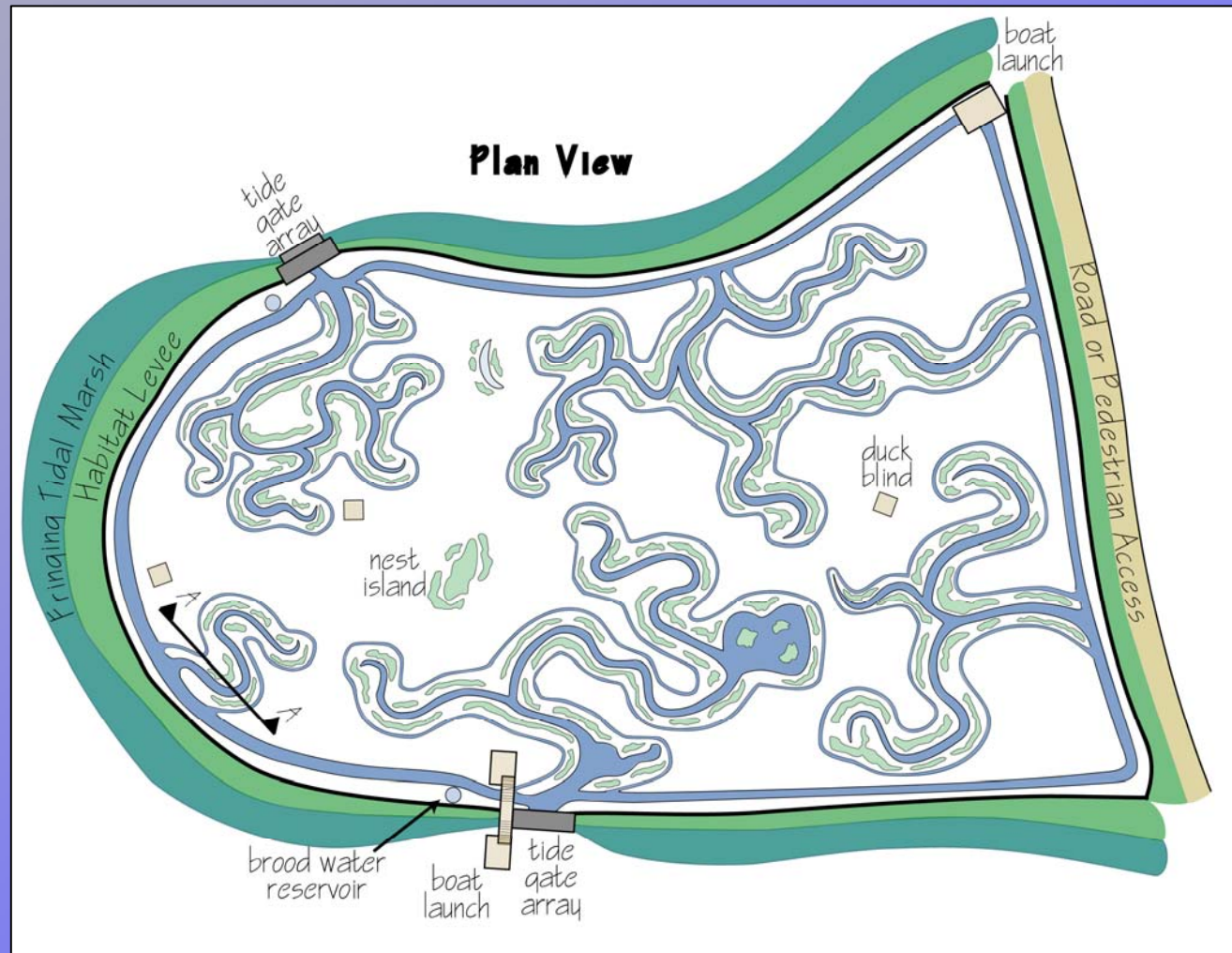


- Infrequent overtopping allows mineral sediment accretion.
- Reduces maintenance cost (and environmental permitting)
- Linear plant zonation provides waterfowl cover and nest options

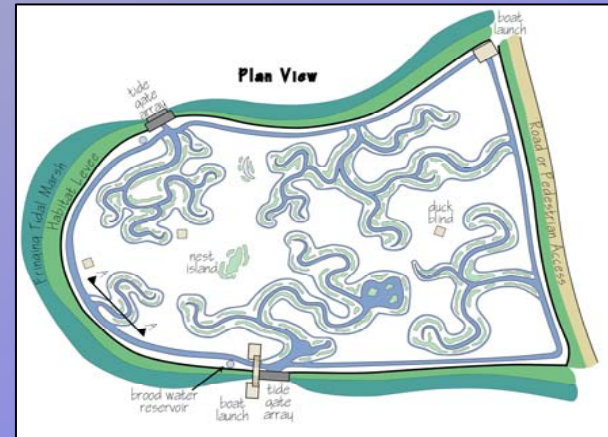
Microtidal Wetland Management Concept

Goal: Provide sustainable high-quality managed waterfowl habitat that is complementary with other Suisun Marsh resource needs.

- Permanently flooded, muted tidal range
- SAV beds
- Shallow water fish habitat (no need for fish screens)
- Year-round water bird habitat
- Eliminates subsidence



Synergy: Habitat Levees, Microtidal Wetland Management, and Flood Control



- Promotes fish access to high quality edge habitat.
- Tidally fluxed sediment loads will accrete along shallow levee slopes.
- Reduces flood fight costs.
- Enhances flood control reliability for microtidal managed wetlands.

Thank you